



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,090	10/20/2003	Kevin S. Grant	1-2-27	3808

7590 11/09/2007
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560

EXAMINER

RUSSELL, WANDA Z

ART UNIT	PAPER NUMBER
----------	--------------

2616

MAIL DATE	DELIVERY MODE
-----------	---------------

11/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/689,090

Applicant(s)

GRANT ET AL.

Examiner

Wanda Z. Russell

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-8, 11, 14-17, and 20** are rejected under 35 U.S.C. 102(e) as being anticipated by Lay (Pub No. US 2002/0176357).

For **claim 1**, Lay teaches a method (Abstract, line 1) for providing backpressure ([0028], last line) information from a physical layer device (PHY-Fig. 1A) to a link layer device (MAC-Fig. 1A) in a communication system (100-Fig. 1A), the method comprising the steps of:

generating (calculate, [0008], line 4, and lines 1-4) a flow control message (amount of memory, [0039], lines 4-5) in the physical layer device responsive to a detected condition relating to at least a given one of a plurality of queues ([0037], line 3) of the physical layer device; and

transmitting (issue, [0039], 3rd line from the end) the flow control message from the physical layer device to the link layer device;

wherein the flow control message comprises backpressure information associated with the given queue of the physical layer device and is transmitted from the

physical layer device to the link layer device ([0039], last 4 lines) as an in-band message ([0031], line 8) over an interface between the physical layer device and the link layer device.

For **claim 2**, Lay teaches the method of claim 1 wherein the given queue has an upper threshold (high threshold , [0077], line 6) and a lower threshold (low threshold , [0077], line 2) associated therewith, corresponding to respective fullness levels of the queue.

For **claim 3**, Lay teaches the method of claim 2 wherein the flow control message comprises backpressure ([0028], last line) information indicating that the queue fullness has crossed the upper threshold from below that threshold ([0077], last 4 lines).

For **claim 4**, Lay teaches the method of claim 2 wherein the flow control message comprises backpressure information indicating that the queue fullness has crossed the lower threshold from above that threshold ([0077], lines 1-5).

For **claim 5**, Lay teaches the method of claim 1 wherein the flow control message comprises in addition to the backpressure information an identifier (RECEP_COMPL, [0070], lines 1-7, and last 3 lines) of the given queue with which the backpressure information is associated ([0028], and [0070]).

For **claim 6**, Lay teaches the method of claim 5 wherein the identifier comprises a logical MPHY value corresponding to the given queue ([0070], lines 4-7).

For **claim 7**, Lay teaches the method of claim 1 wherein the flow control message identifies a particular one of a plurality of detected conditions relating to the

given queue, the plurality of detected conditions comprising at least an over-threshold condition and an under-threshold condition ([0077]).

For **claim 8**, Lay teaches the method of claim 7 wherein the plurality of detected conditions further comprises an empty queue condition and a full queue condition ([0075], lines 1-2, [0076], lines 1-3, and [0077], lines 1-end).

For **claim 11**, Lay teaches the method of claim 1 wherein the flow control message is deliverable from the physical layer device to a designated queue (point to a queue, [0070], lines 11-12, and 7-end) of the link layer device.

For **claim 14**, Lay teaches the method of claim 1 wherein the link layer device is operative to perform multiple-rate traffic shaping responsive to the backpressure (collision backpressure, [0028], last line, and [0071], line 2) information in the flow control message ([0071], lines 1-end).

For **claim 15**, Lay teaches the method of claim 14 wherein the link layer device is operative to perform the multiple-rate traffic shaping by selecting ([0039], lines 6-end) one of a plurality of available scheduling rates for a channel associated with the egress queue of the physical layer device responsive to backpressure information in the flow control message.

For **claim 16**, Lay teaches the method of claim 15 wherein the link layer device is operative to perform the multiple-rate traffic shaping (FCM 116, [0077], line 7) by selecting a first one (slow down, [0077], line 5) of the plurality of available scheduling rates for the channel if the backpressure information indicates an under-threshold condition ([0077], line 2), and selecting a second one (dropping, [0077], line 8) of the

plurality of available scheduling rates for the channel if the backpressure information indicates an over-threshold condition ([0077], line 6).

For **claim 17**, Lay teaches the method of claim 16 wherein the first and second rates correspond to 100% and 80%, respectively, of a nominal High-level Data Link Control (HDLC) channel rate (Lay uses 90% and 80%, and those numbers can be set arbitrarily).

For **claims 18-19**, they are apparatus claims corresponding to method claim 1. Therefore it is rejected for the same reason above.

For **claim 20**, Lay teaches a method for providing multiple-rate traffic shaping ([0039], lines 6-end) in a link layer device in a communication system, the method comprising the steps of:

Receiving (monitor, [0039], line 4) from a physical layer device of the system a flow control message (amount of memory, [0039], lines 4-5) responsive to a detected condition relating to at least a given one of a plurality of queues ([0039], line 3) of the physical layer device; and

selecting (setting, [0039], lines 8-end) one of a plurality of available traffic shaping characteristics (memory, [0039], line 8) for utilization with a given channel between the link layer device and the physical layer device based at least in part on the flow control message.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2616

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay as applied to claim 1, above, further in view of McDonnell (Pub No. US 2005/0278503).

For **claim 9**, Lay lacks what McDonnell teaches: The method of claim 1 wherein the interface between the physical layer device and the link layer device comprises an SPI-3 ingress interface ([0041], line 9).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Lay] with [McDonnell] to obtain the invention as specified, for associating with more interfaces.

For **claim 10**, Lay and McDonnell teaches everything claimed as applied above (see claim 1 and 9). In addition, Lay teaches the method of claim 9 wherein the flow control message is transmitted at a highest priority level (FIFO, [0069], line 2) on the SPI-3 ingress interface between the physical layer device and the link layer device.

5. **Claims 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay as applied to claim 1, above, further in view of Munter (Pub No. US 2002/0075540).

For **claim 12**, Lay lacks what Munter teaches: The method of claim 11 wherein the designated queue comprises a class of service (CoS) ([0056], line 3) queue of the link layer device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Lay] with [Munter] to obtain the invention as specified, for protecting a type of traffic.

For **claim 12**, Lay lacks what Munter teaches: The method of claim 12 wherein the CoS queue is one of a plurality of CoS queues serviced by a quality of service (QoS) ([0089], 5th line from the end) queue of the link layer device.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Lay] with [Munter] to obtain the invention as specified, for providing better service.

Response to Arguments

6. Applicant's arguments filed September 25, 2007 have been fully considered but they are not persuasive.

7. Applicant argues that Lay fails to teach or suggest the limitations of claim 1 wherein a flow control message is generated in the physical layer device and transmitted from the physical layer device to the link layer device.

In response, the Examiner respectfully disagrees.

As quoted by applicant, in paragraph [0039] Lay teaches Flow Control Manager 116 can monitor the amount of memory being used by each of the ports 102(10-102(12) of switch 11. To a person of ordinary skill in the art the ports are in the physical layer, and therefore the amount of memory being used by the ports, which is the flow control message, is generated in the physical layer. Still in the paragraph [0039] Lay teaches that Flow Control Manager 116 will issue commands over the ATM Bus requesting the

Art Unit: 2616

port to slow down and may drop packets. It implies that the flow control message is transmitted from the physical layer device to the link layer device. This limitation is also described in paragraph [0028] that states flow control is provided by each of the MACs. It implies that the flow control message is transmitted from the physical layer device to the link layer device.

8. Applicant also argues that the Flow Control Manager 116 Lay teaches is not a physical link device. Applicant quoted the paragraph [0028] to aver that the Flow Control Manager is located in link layer, not in physical layer.

In response, the Examiner respectfully disagrees.

In paragraph [0028], Lay teaches only the control (function) is provided by each of MACs, and does not state the Control Manager is located in the MAC layer. Keep in mind that in paragraph [0039] Lay teaches that Flow Control Manager 116 can monitor the amount of memory being used by each of the ports. It can be seen that the control process involves both physical layer and link layer, just as claimed in the invention. Also note that the Fig. 1A taught by Lay is a functional drawing, not a layout drawing. The Flow Control Manager could be located in either PHY or MAC from the description above.

Claims 18, 19, and 20 are rejected for the same reason above.

Rejection of dependant claims remains effective.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2616

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wanda Z. Russell whose telephone number is (571) 270-1796. The examiner can normally be reached on Monday-Thursday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Art Unit: 2616

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZR *WZR*

Chau Nguyen

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600